

## **REMARKS**

The issues outstanding in the Final Rejection mailed December 12, 2008, are the objection to claim 3 and the rejections under 35 U.S.C. 102 and 103. Reconsideration of these issues, in view of the following discussion, is respectfully requested.

### **Claim Objections**

The Examiner is thanked for noting the typographical error in claim 3. Appropriate correction has been made, and withdrawal of the objection is respectfully requested.

### **Rejection Under 35 U.S.C. 102**

Claims 1-9, 12, 24 and 25 have been rejected under 35 U.S.C. 102(b) over Yoo '737. Reconsideration of this rejection is respectfully requested.

It is submitted, at page 3 of the office action, that Yoo does not explicitly disclose that 1, 3-butadiene is converted to cis-2-butene, but it is argued that "the process of Yoo would have inherently produced such a claimed product since the feed and the catalyst are the same as that which are claimed." Applicants respectfully disagree with this analysis. First, it is well established that, to constitute anticipation, all material elements of a claim must be found in one prior art source. See *In re Marshall*, 577 F.2d 301, 198 USPQ 344 (CCPA 1978). While it is acknowledged that, even where an element is not expressly disclosed in the prior art reference, the reference can still anticipate, this is if and *only* if the missing element is "necessarily present" not merely, probably or possible present. See *Rosco Inc. v. Mirror Lite Co.*, 64 USPQ 2d 1676 (Fed.Cir. 2002). It is thus manifest that the reference cannot support an anticipation rejection. Although butenes are mentioned in the last line of column 8, there is no mention of 1, 3-butadiene in the entire patent. The closest disclosure is in examples V and VIII wherein 1,3-pentadiene is reacted, but these disclosures do not in any way suggest that 1,3-butadiene can be converted primarily to cis-2-butene. Accordingly, it is submitted that the reference does not disclose the present invention, and withdrawal of the anticipation rejection should be made.

### **Rejections Under 35 U.S.C. 103**

Claims 10, 11 and 17-23 have been rejected under 35 U.S.C. 103 over Yoo. It is again respectfully submitted that the reference is directed to a heterogeneous catalyst, inasmuch as an inorganic oxide support is an element of the catalyst (see column 1, lines 13 and 14). Note also column 7, lines 24-30 stating that an inorganic support material is contacted with a solution of the metal component, and column 10, lines 4-6 teaching that the acidic solid silica-based and inorganic material is used as matrix in co-catalyst. While it is argued, at page 7 of the Final Rejection, that if the liquid catalyst is immiscible with a feed then it is a heterogeneous catalyst, and moreover Yoo discloses that the catalyst can be in liquid form, there is apparently a misunderstanding in this portion of the office action. Attention is directed to the attached Declaration Under 37 C.F.R. 1.132 explaining, in considerable detail, why the Yoo catalyst would be recognized by one of ordinary skill in the art as a heterogeneous catalyst. In particular, the declaration notes that the catalysts are in solid phase, usable in fixed bed and slurry forms. The presence of a liquid solvent phase, as disclosed in the patent, does not necessarily mean that the process uses a homogeneous catalyst. The declaration further explains why one of ordinary skill in the art would not find it obvious to transfer any teaching from Yoo, employing a heterogeneous catalyst, to a process using a homogeneous catalyst. Moreover, it is again maintained that the Yoo patent, which does not disclose either 1, 3-butadiene or cis-2-butene, simply does not allow one of ordinary skill in the art to predict that the yields of 1, 3-butadiene disclosed in the present examples could be achieved with such a catalyst. It is thus respectfully submitted that this rejection should be withdrawn.

Claims 13-16 have been rejected under 35 U.S.C. 103 over Yoo taken with Musmann. Reconsideration of this rejection is also respectfully requested.

Apparently at page 7, Musmann is relied on only for its teaching of ionic liquid solvent. Although the patent discloses hydrogenation of 1, 3-butadiene to butane, it does not suggest that 98% cis-2-butene could be produced, as demonstrated in the present examples. As discussed in the attached declaration under 37 C.F.R. 1.132, one of ordinary skill in the art simply does not know that such a result for this particular olefin can be achieved with the use of a homogeneous catalyst. It is argued at page 7 of the office action that it is "expected" that the combination of

Yoo and Mussmann will result in such conversion, but no arguments why such would be expected are given. The declaration explains why such would not be the case.

Accordingly, it is respectfully submitted that this rejection should also be withdrawn.

The claims of the application are submitted to be in condition for allowance. However, if the Examiner has any questions or comments, she is cordially invited to telephone the undersigned at the number below.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,

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